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ABSTRACT

This paper presents findings of a study that examined the role of social networks in promoting or inhibiting student achievement. The study was based on the convoy model--a "convoy" is a dynamic, hierarchical structure of social relations that provide the individual with a supportive base from which to develop personal competencies. The premise of the study was that academic achievement would be related positively to the amount of social support provided by social-network members (if those persons providing support also held positive attitudes toward school achievement). Data were obtained through: (1) interviews with 63 children in grades 2 and 5 at a Dade County (Florida) public elementary school; (2) parent questionnaires; (3) a survey of students identified by the 63 children as their friends; and (4) analysis of student grade-point averages (GPAs) and Stanford Achievement Test (SAT) scores. Findings suggest that the support provided by social network members does not promote achievement directly, but interacts with the attitudes of the support providers. The findings help to explain why social support is not always related positively to achievement outcomes and why social-network member attitudes will not necessarily predict achievement. A combination of strong support and positive attitudes from social-network members are most likely to foster school achievement. Four figures are included. (contains 26 references.) (LMI)

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SOCIAL SUPPORT NETWORKS AND ACHIEVEMENT: THE ROLE OF NETWORK MEMBER ATTITUDES

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SOCIAL SUPPORT NETWORKS AND ACHIEVEMENT:

THE ROLE OF NETWORK MEMBER ATTITUDES

The study that I am reporting today represents the combined interests of myself and my associates at Florida International University and of Dr. Jerry Levitt, who is with the Office of Educational Accountability of the Dade County Public School system. The focus of our research has been on the social networks in which school children are embedded and the role of social relations in promoting or inhibiting achievement. A growing body of research focused on the social support networks of children has revealed that social support is related positively to emotional well-being ourcomes, such as self-esteem, affect, and loneliness (Sandler, Miller, Short, & Wolchik, 1989; Levitt, Guacci-Franco, & Levitt, 1993), but the relation between support and achievement is more complex (Cauce, Felner, & Primavera, 1982; Levitt, Guacci-Franco, & Levitt., 1994). As a result of our present research, we hope to increase our understanding of the functioning of the child's support system, particularly with regard to school outcomes.

We have found that the convoy model of social relations (Kahn & Antonucci, 1980) provides a useful conceptual and methodological framework for the study of children's social networks. In line with other conceptualizations (Blyth & Foster-Clark, 1987; Boyce, 1985; Bryant, 1985; Furman & Buhrmester, 1985, 1992; Weiss, 1974), the convoy model is grounded in research on human attachment (Ainsworth, Blehar, Waters, & Wall, 1978). The convoy is viewed as a dynamic hierarchic structure of social relations that move with the individual throughout life. Optimally (but not always), the convoy provides the individual with a supportive base from which to develop and exercise personal competencies (Antonucci & Jackson, 1987).

The convoy emerges from a core of attachment figures in early childhood to incorporate new persons who are emotionally close and who serve an important role in the individual's life. Changes in the convoy are hypothesized to occur as a result of normative life transitions, nonnormative events, and individual maturation. The convoy is defined empirically as a series of concentric circles with the individual at the center. Persons linked strongly to the individual both affectively and by role status, such as close family members, tend to occupy the inner circle. Those who are less close emotionally or who are linked solely through a specific role, such as extended kin, friends, and others, are more likely to be found in the peripheral regions of the convoy.

In our research, we have developed a modification of the convoy mapping procedure typically employed with adults (Antonucci, 1986) to measure the social networks of children and adolescents. This modified procedure is illustrated in the first figure [FIGURE 1], which depicts a typical child network. The child is shown a standard concentric circle diagram and the child's name is written on a sticker and placed in the center of the diagram. The child is then asked to name those who are "so close that you can't imagine life without them--people who love or like you the most and who you love or like the most." The name of each person nominated by the child is written on a sticker and placed into the inner circle of the diagram. Persons who are less close are placed subsequently in the second and third circles.

Once the network is mapped in this way, the child is asked to indicate which persons from the network perform each of six support functions. [FIGURE 2} The support function questions are depicted in this next figure. As you can see, we asked in whom the child confides, who reassures the child, who would take care of the child if ill, who helps with school work, who likes to be with

the child, and who makes the child feel special. These questions tap the domains of affective support, self-affirmation, and direct aid specified as important in the convoy model. Factor analytic results (Levitt, Guacci-Franco, & Levitt, 1993; 1994) indicate that the individual functions can be combined to form general support scales. In our studies, we have typically used summary indices reflecting the amount of support provided by family members and friends, as well as by the network as a whole. We have found generally that network members who are not in the friend or family categories are few in number and provide little support. Internal consistency and test-retest reliabilities for the support measures have been good to excellent (Levitt et al. 1993).

In a previous study, we used this procedure to obtain information regarding the networks and available support of children in grades 1-2, 4-5, and 8-9 from three different ethnic groups (African-American, Euro-American, and Hispanic-American). We found that support was related directly to measures of emotional well-being, including self-concept and loneliness, but the relation of support to achievement was largely mediated by the child's self-concept. Although these effects were consistent across ethnic groups, comparisons of the efficacy of family versus peer support revealed some ethnic variation. Support from close family members was related to self-concept for both Euro-American and Hispanic-American children, but peer support, rather than family support, was associated with the self-concepts of African-American children. These results were in accord with previous findings suggesting that peer support is more salient for African-American adolescents (Cauce et al., 1987; Coates, 1985; Steinberg, Dornbusch, & Brown, 1992). However, as the proximal factors accounting for ethnic group variation are unknown, it was impossible to draw conclusions about the meaning of these effects (Jackson, Antonucci, & Gibson, 1990).

With regard to achievement, there is evidence to suggest that social networks may be related to school outcomes, but the effects are often modest or indirect.. We have drawn the conclusion that social support, in and of itself, will not necessarily promote achievement behavior and that other factors, such as the attitudes of network members toward school achievement, are likely to be involved. Thus, we are reporting on the results of a preliminary study that was designed to evaluate the extent to which support interacts with the attitudes of social network members in predicting achievement. Specifically, we hypothesized that *the child's achievement behavior would be related positively to the amount of support provided by social network members to the extent that network members also hold positive attitudes toward achievement.*

Although there has not been a direct test of this hypothesis, there are relevant studies. In a 1992 review, Wigfield and Eccles noted that little research has been directed to the impact of perceived parental values on student attitudes toward achievement, but they cited research by Eccles et al. indicating that student valuation of math is related to student beliefs about parental expectancies. In addition, a number of researchers have demonstrated that parental beliefs mediate the effect of parenting style on child behavior (Murphey, 1992). Another line of research has been concerned with parent versus peer influence. Steinberg, Dornbusch, and Brown (1992), in reporting the results of a large-scale cross-ethnic study of parenting styles and adolescent achievement, concluded that positive effects of authoritative parenting are offset by the greater salience of peer group attitudes for minority children. Similarly, Cauce et al. (1982) found a negative relation between peer support and achievement in inner-city African-American adolescents. Others have argued that minority group peers may devalue achievement behavior because it is inconsistent with ethnic identification (Clark, 1991), particularly for inner city

African-American youths who see little value in "acting white" in order to succeed in school (Ogbu, 1986). Thus, support does not always lead to positive outcomes.

Assessing directly the interaction of support with the attitudes of support providers should help to clarify the conditions under which support may lead to positive or negative consequences. In a study that was focused specifically on the interaction of support and support provider attitudes, Grube and Morgan (1990) found that support interacted with supporters' attitudes to predict adolescent smoking, drinking, and drug use. However, these authors did not examine achievement outcomes. The premise of our current study, again, was that support would be related positively to achievement measures if those persons providing support also hold positive attitudes toward school achievement.

The focal participants in this study were 63 children (37 girls; 26 boys) in grades 2 (N = 30) and 5 (N = 33) attending a local public elementary school. The children in the sample were distributed relatively evenly across three ethnic groups (35% African-American, 29% Euro-American and 35% Hispanic-American). We sent letters of explanation with assurances of confidentiality and consent forms home to parents or guardians of all students in the relevant grades. Selection of participants was random from among students whose parents or guardians returned signed consent forms.

We interviewed these children individually at school to obtain information about their support networks. Interviewers were generally matched to the child by ethnicity. To obtain data regarding social network attitudes, as part of the interview, children were asked to provide information regarding their household composition. They were also asked to nominate their three "best" class friends. Questionnaires containing measures of attitudes toward achievement were

sent to the child's home to be completed by the adult or adults in the household with responsibility for the child. These were usually the child's parents. All of the study children and all children nominated as friends for whom parent permission was obtained completed the attitude questionnaires during group sessions in their classrooms. Friend attitude surveys were obtained for all of the focal children in the sample, but parent surveys were returned for only 54 percent of the children.

Items comprising the achievement attitude measure are depicted in this next figure [FIGURE 3]. All but the last item were drawn from indices of school attitudes employed by Stevenson, Chen, and Uttal (1990). The first item is a "value of education" index assessing the importance of the child's attaining good grades. The next four items tap attitudes toward school-related topics, including school in general, reading, math, and homework. For these questions, parents were asked to indicate how they had felt when they were in school. The final item, assessing expectations for educational attainment, was taken from a study by Okagaki and Sternberg (1993).

All items were scored from 1 to 5, with higher numbers indicating more positive attitudes. The six items were aggregated to form general attitude toward achievement scales for family members, friends, and family and friends combined. Thus, for any given child, the aggregate friend attitude measure consisted of the mean of responses from one to three friends; the aggregate family measure was the mean for one or two adult family members, and the combined network member attitude measure was the mean of the means for family members and friends together. Internal consistency was acceptable, with an alpha of ..64.

To index achievement, we obtained grade reports and Stanford Achievement Test scores for each child from centralized school records. We collapsed across grades in reading and math to create a mean grade point average or GPA score and we collapsed the reading comprehension and math computation scores from the Stanford Achievement Test to create mean SAT scores.

The next overhead depicts the results of a series of hierarchical multiple regression analyses conducted to test our hypothesis that achievement would be related to the joint effect of social support and network member attitudes. [FIGURE 4]. In each analysis, grade and gender were entered first as control variables. The support and attitude measures were entered next as main effect predictors. Multiplicative indices representing the interaction of support and attitudes were entered last, following the recommendation of Cohen and Cohen (1983). The achievement measures were the criteria. These analyses are not definitive, given the limited nature of our sample, but they provide a preliminary glimpse of the merits of the proposed hypothesis.

The first set of analyses included the total support from the network as a predictor along with the aggregated network member attitude measure. The total support by network member interaction term was related significantly to SAT scores and, although not significant, the beta for the relation of the interaction to GPA suggests that this effect would reach significance with a larger sample. The results for the second set of analyses using support from close family members and the family attitude measure as predictors were not significant, although the results for grade point average were in the anticipated direction. Unfortunately, given the parent survey return rate, these analyses were based on only half of the sample. Thus, it is not surprising that this result did not attain significance. In the last analyses, the interaction of friend support with friend attitudes was significant for SAT scores and marginally significant for grade point average.

As we thought these results might vary by grade level or by specific type of achievement task, that is, reading versus math, we performed additional analyses to explore these possibilities. There was little indication in these subsidiary analyses that the reported results differ by task type or grade. The effects were somewhat more robust for fifth than for second graders, but the results were in the same direction for both groups.

The results suggest that the support provided by social network members does not promote achievement directly, but rather interacts with the attitudes of the support providers. These findings help to explain why social support is not always related positively to achievement outcomes (and, in complement, why social network member attitudes will not necessarily predict achievement). It is likely to be a combination of strong support and positive attitudes from social network members that fosters school achievement.

As we have indicated, the present study was only preliminary. Our conclusions at present are based on a small heterogeneous sample with only partial family attitude data. However, we are encouraged that interactions of support and network member attitudes emerged even with our limited sample. We are planning a larger project to assess the extent to which these findings apply to low-income children who are at-risk for educational failure as well as to middle income children. Ultimately, we expect our results to add to our understanding of the complex set of noncurricular factors that impact on educational attainment and to provide important information with respect to the targeting of intervention strategies.

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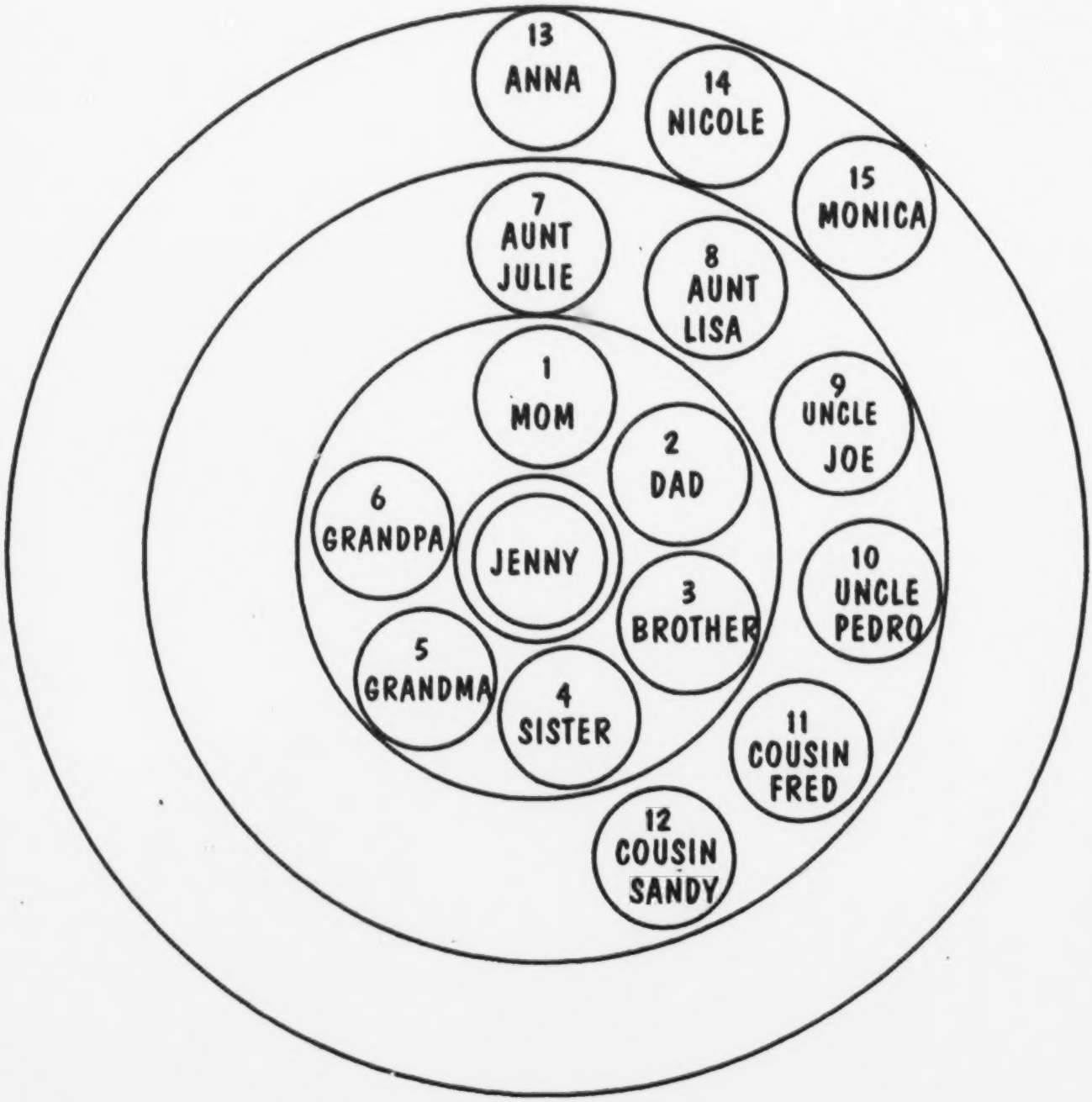
CHILD NETWORK MAP

(Figure 1)



SUPPORT FUNCTIONS

(Figure 2)

1. Are there people you talk to about things that are really important to you?
2. Are there people who make you feel better when something bothers you or you are not sure about something?
3. Are there people who would take care of you if you were sick?
4. Are there people who help you with homework or other work that you do for school?
5. Are there people who like to be with you and do fun things with you?
6. Are there people who make you feel special or good about yourself?

ACHIEVEMENT ATTITUDES

(Figure 3)

1. How important is it to get good grades in school?
2. How much do (did) you like school?
3. How much do (did) you like to do reading in school?
4. How much do (did) you like to do math in school?
5. How much do (did) you like to do homework?
6. When do you think you (your child) will stop going to school?

SUPPORT, ACHIEVEMENT ATTITUDES AND ACHIEVEMENT:

REGRESSION ANALYSIS

(Figure 4)

Predictors	GPA	SAT
Grade	-.14	.77**
Gender	.30**	-.03
Total Support	.13	.05
Network Attitudes	.02	-.19*
Tot. Sup. x Net. Att.	.22	.20**
Family Support	.13	.08
Family Attitudes	-.01	-.01
Fam. Sup. x Fam. Att.	.20	.05
Friend Support	.11	.04
Friend Attitudes	.10	-.13
Frd. Sup. x Frd. Att.	.24*	.20**

Numbers are standardized beta weights.

* $p < .10$. ** $p < .05$